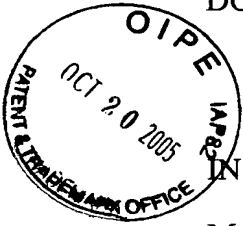


DOCKET NO: 9847-0004-6XPCT



IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

:

MATS LEIJON ET AL.

: EXAMINER: NGUYEN, CHAUN

SERIAL NO: 09/147,320

:

RCE FILED: NOVEMBER 15, 2004

: GROUP ART UNIT: 2831

FOR: INSULATED CONDUCTOR FOR  
HIGH-VOLTAGE WINDINGS

:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicants respectfully request that a pre-appeal brief conference be initiated in accordance with the pilot program outlined in the Official Gazette Notice of July 12, 2005.

I. Failure to Create a *Prima Facie* Case of Obviousness

Applicants submit that the Official Action of July 20, 2005 fails to make a *prima facie* case of obviousness with respect to each of the claims. Each of the pending claims are rejected over the combination of Dyba et al. (U.S. Patent No. 3,914,532) in view of Hvizd, Jr. et al. (U.S. Patent No. 4,361,723), perhaps in view of a tertiary reference.

By way of example, Claim 19 is directed to insulated conductor for a high-voltage winding in an electric machine. The winding's conductor includes a plurality of strands, and inner conductive layer that surrounds and contacts the plurality of strands, an insulating layer that surrounds the inner conductive layer, and an outer conductive layer that surrounds the insulating layer. The resistivity of the outer layer is in an inclusive range of 10-500 ohm\*cm.

As explained in the response of January 20, 2000, see e.g., argument beginning at page 3, conventional power cables are unsuitable for use as high-voltage winding since, among other things, they do not include an outermost layer with a resistivity in a range of 10-500 ohm\*cm. The present Applicants identified that having a resistivity of the outermost conductive layer in an inclusive range of 10-500 ohm\*cm permits sustained and reliable use at high-voltages in an electric machine.

The inventors also recognized that in order to use a structure as a high-voltage winding in an electric machine, the insulation must not break down as a result of glow discharge. However, if the resistivity is too great, the voltage on the second conductive layer will be so high that there will be risk of glow discharge. This glow discharge should be avoided since it will gradually degrade the insulation material and may lead to electric breakdown through the insulation. Thus, the present inventors identified that the resistivity of the second conductive layer is a design parameter that should be controlled so as to support high-voltage operations.

The present inventors also recognized that the resistivity cannot be too low in a high-voltage winding application because eddy current losses will become too high, thus giving rise to thermal stress and risk of shorting. This restriction between the low resistivity and the high resistivity is explained mathematically at page 16, line 1, equation 2. Thus, in summary, the high end of the resistivity range is limited by glow discharge threshold and the low end of the resistivity range is set by a maximum permissible eddy currents. The environment in which eddy currents would exist, as well as glow discharge, is when exposed to a high magnetic field when configured as a winding in an electric machine.

Claim 19 is rejected as obvious over Dyba in view of Hvizd, Jr. At the top of page 3 of the outstanding Office Action, the Examiner erroneously asserts that Dyba discloses an insulated conductor for a high-voltage winding in an electric machine. In fact, this cannot be

the case as Dyba explains that it uses a lead sheath 12, which would not be able to withstand the high magnetic fields of an electric machine. The outstanding Office Action also asserts Hvizd, Jr., for disclosing a semi-conductive material with a resistivity in the range of 1-1,000,000 ohm\*cm. However, Hvizd, Jr. also discloses a shield 18, that is a conductive metallic shield (column 4, line 10), which would render Hvizd, Jr. unfit for use as a winding in an electric machine. Contrary to the basis of the rejection, it is respectfully submitted that both Dyba and Hvizd, Jr., by virtue of including lead sheath 12 (in Dyba), and metallic shield 18 (Hvizd, Jr.) are not directed to windings for use in an electric machine, but are rather directed to high-voltage cables, which are not used in electric machines.

One of the requirements for a *prima facie* case of obviousness is that the prior art must suggest the desirability of the claimed invention (MPEP 2143.01). The proposed modification, employing the semiconductor material 16 from Hvizd, Jr., in Dyba, would not remove the lead shield, which would make it completely inapplicable for use as a winding in an electric machine. Furthermore, removing the shield would make the cable unfit for its use as a power cable. Thus, the proposed modification would render Dyba unfit for its intended purpose, and therefore is an improper combination.

Moreover, neither Dyba nor Hvizd, Jr. describe windings for use in an electric machine, but simply describe cables. Accordingly, it is respectfully submitted that the outstanding Office Action has not created a *prima facie* case of obviousness, because neither reference describes a winding for an electric machine, and the alleged suggestion or motivation to modify the references as suggested in the outstanding Office Action, would render Dyba unfit for its primary purpose of operating as a high-voltage cable that requires a shield, and unfit for use in an electric machine as a high-voltage winding.

Although of different statutory class and/or scope, each of the other pending claims is also rejected over Dyba in view of Hvizd, Jr., perhaps in view of a tertiary reference.

However, it is also believed that these references do not teach or suggest all the features of the claims and thus are equally deficient for substantially the same reasons as discussed with regard to Claim 19.

## II. Double Patenting Rejection

Applicants request that the double patenting rejection be held in abeyance until the decision on the prior art rejections of the pending claims has been finally determined. It is a reasonable request to hold the double patenting rejections in abeyance because the rejection may easily be overcome with a Terminal Disclaimer, but it is premature to file such a Terminal Disclaimer until the claims in the present application have been finally determined.

## III. Conclusion

Based on this clear legal deficiency in the above-noted rejection, Applicants request the withdrawal of the rejection of each of the pending claims.

Respectfully submitted,

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